

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau(43) International Publication Date
4 November 2004 (04.11.2004)

PCT

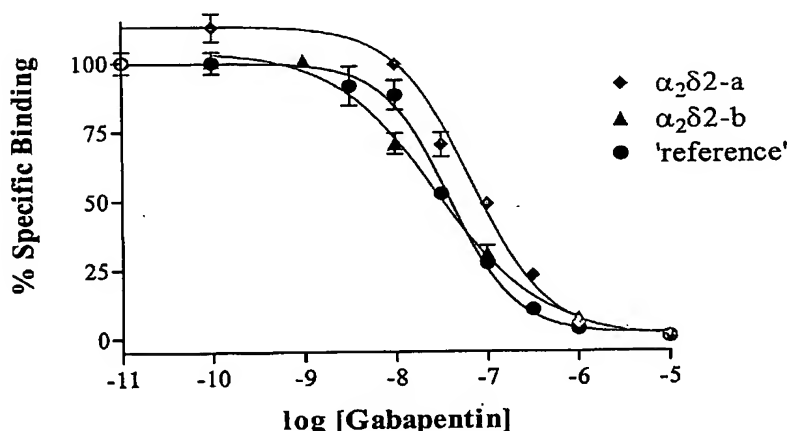
(10) International Publication Number
WO 2004/094604 A2

- (51) International Patent Classification⁷: C12N 0907 (US). COHEN, Charles, Jay [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US). WILLIAMS, Mark, Edward [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US).
- (21) International Application Number: PCT/US2004/012045
- (22) International Filing Date: 16 April 2004 (16.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/463,826 18 April 2003 (18.04.2003) US
- (71) Applicant (for all designated States except US): MERCK & CO., INC. [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): AIYAR, Jayashree [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065-
- (74) Common Representative: MERCK & CO., INC.; 126 East Lincoln Avenue, Rahway, NJ 07065-0907 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: SPLICE VARIANTS OF HUMAN VOLTAGE-GATED CALCIUM CHANNEL ALPHA2DELTA-2 SUBUNIT DESIGNATED-ALPHA2DELTA2-A AND ALPHA2DELTA2-B

Binding of ³H-gabapentin to
 $\alpha_2\delta_2$ splice variants (normalized
data)



(57) Abstract: The invention provides novel nucleic acid molecules of an alternative splicing variant of a human calcium channel subunit $\alpha_2\delta_2$. Also provided are the gene products of the nucleic acid molecules, antibodies specific thereto and methods of using the polynucleotides or polypeptides to identify medicaments useful for treating pathological disorder characterized by aberrant calcium influx mediated by one or both of the $\alpha_2\delta$ - subunit isoforms disclosed herein. Pharmaceutical compositions containing, as an active ingredient expression vectors comprising any one or both of the polynucleotides or encoded proteins are also provided.

Splice Variant	IC ₅₀ (nM)	r ²
$\alpha_2\delta_2a$	67.13	0.9891
$\alpha_2\delta_2b$	27.91	0.9989
'reference'	38.70	0.9985



GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.